

# **Exhibit 8**

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF MICHIGAN

**DECLARATION OF  
BRUCE E. BIEWALD**

(1) My name is Bruce Edward Biewald, and I am the President of Synapse Energy Economics Inc., a consulting company in Cambridge, Massachusetts specializing in analysis of electric power systems. I have nearly thirty years of experience advising state agencies, consumer and environmental advocates, utilities and others on issues related to the production and consumption of energy. I have testified in more than one hundred utility regulatory proceedings in twenty-six states and two Canadian provinces, in cases in State and Federal Courts, and in proceedings of the Federal Energy Regulatory Commission and the Nuclear Regulatory Commission's Atomic Safety and Licensing Board. I have co-authored more than one hundred reports, including studies for the Electric Power Research Institute, the US Department of Energy, the US Environmental Protection Agency, the Office of Technology Assessment, the Ozone Transport Commission, the New England Governors' Conference, the New England Conference of Public Utility Commissioners, the National Association of Regulatory Utility Commissioners, and the United Nations Framework Convention on Climate Change. My

papers have been published in the Electricity Journal, Energy Journal, Energy Policy, Public Utilities Fortnightly, and numerous conference proceedings.

- (2) As president of Synapse Energy Economics, I oversee a staff of twenty individuals, conducting many dozens of consulting assignments each year. Our work includes consulting projects dealing with electric industry restructuring, stranded costs, system benefits, market power, mergers and acquisitions, generation asset valuation and divestiture, rate cases, power plant costs and performance, power supply contracts and performance standards, electric power system reliability, renewable power generation, demand-side management, air emissions from power plants, and electricity market simulation modeling for price forecasting and market power analysis. Synapse's governmental clients include federal agencies such as the Environmental Protection Agency, state Attorneys General, Consumer Advocates, utility regulatory commissions, and a variety of cities and towns. We also work for a number of non-governmental consumer advocates and environmental organizations, as well as associations of agencies, foundations, and private clients.
- (3) My experience with electric system simulation modeling began in 1981, on projects to evaluate the economics of power system expansion plans. My experience includes programming these computer models, applying them in various types of analyses, and critiquing the application of these models by others. My own modeling work has involved simulation modeling of electric systems throughout the United States, including the PacifiCorp system in the Northwest; the MAPP, MAIN, and ECAR regions of the Midwest; the MACC, New York, and New England system in the Northeast, the Entergy

and Southern Company systems in the South; and a large number of smaller regions and utility systems.

- (4) In January of 2000, Synapse Energy Economics entered into a license agreement with Henwood Energy Services (now “Ventyx”) for the use of PROSYM. Synapse has applied PROSYM (now “Market Analytics”) in a dozen different projects for clients including the US Environmental Protection Agency, the Ozone Transport Commission, the Arkansas Public Service Commission Staff, the Vermont Department of Taxes, the Iowa Office of Consumer Advocate, the City of New York, and a number of environmental organizations. My staff have been trained to run models including STRATEGIST, PROSYM, and PROMOD.
- (5) Prior to founding Synapse, I was with Energy Systems Research Group (later Tellus Institute) where I was the manager of the electricity program, and consulted on a wide range of electric system regulatory and economic issues. I have a B.S. from the Massachusetts Institute of Technology where I studied Architecture, Building Technology, and Energy Use in Buildings.
- (6) I have been asked to examine documents related to simulation model runs prepared by Detroit Edison Company (“Detroit Edison” or “the Company”) focusing on the projected operation of Monroe Unit 2. Appendix A is a detailed statement of my qualifications and a listing of past testimony, papers and reports. I am being compensated \$160 per hour for my work on this matter.
- (7) In the paragraphs that follow I describe the PROMOD simulation model, and Detroit Edison’s model run for its Power Supply Cost Recovery (“PSCR”) filing with the

Michigan Public Service Commission, the regulatory agency in charge of determining what rates and costs Detroit Edison recovers from its Michigan ratepayers. In that model run, the projected availability of Monroe 2 is improved relative to the baseline period, and the generation from Monroe 2 increases. This increase in generation cannot be attributed to growth in demand, since the Company's projection of system demand is for a considerable decline in sales.

- (8) The Company runs the PROMOD model for purposes of its annual Power Supply Cost Recovery (PSCR) filings with the Michigan Public Service Commission, among other purposes. PROMOD is a “dispatch” or “production costing model” that simulates the economic dispatching of electricity generating resources to meet customer loads. Economic dispatch is the principle that electric utilities dispatch – or “turn on” – power plants with low operating costs before they dispatch power plants with higher operating costs (subject to various system constraints). Input data to PROMOD includes customer electricity demand, generating unit capacity rates, forced outage rates, planned outages, fuel costs, and O&M costs. The core of the simulation is the way in which the fleet of generating units is operated to serve customer loads throughout a particular time period. The model outputs can include tables of the amount of electricity generation and fuel consumption by generating unit, the amount of air emissions of various types by generating unit, and the operating costs (fuel and O&M) for generating units.
- (9) The PSCR cases are focused on the Company's costs of fuel and purchased power, and regulatory determination of the reasonableness of those costs for recovery from customers. It is central to the purpose of a PSCR case to have an accurate simulation of the system dispatch and the utilization of Detroit Edison's generating units.

- (10) The Company's March 12, 2010, and June 3, 2010, letters (to Michigan Department of Environmental Quality and US EPA Region 5, respectively) present information on the projected operation of Monroe 2, and make reference to the 2010 PSCR PROMOD runs as the basis for those projections.
- (11) A table attached to the Company's March 12 letter lists an annual capacity factor for Monroe 2 for the baseline period (May 2005 to April 2007) at 85.5% and a projected capacity factor for calendar year 2013 at 82.5%. The June 3 letter corrects the baseline capacity factor number to 72.2% (noting that 85.5% is actually the equivalent availability factor for that baseline period) and provides some limited additional information about the PROMOD inputs and projections.

(12) The projected annual capacity factor and equivalent availability factors according to the June 3 letter are as listed in the “EAF” and “CF” columns of the following table.

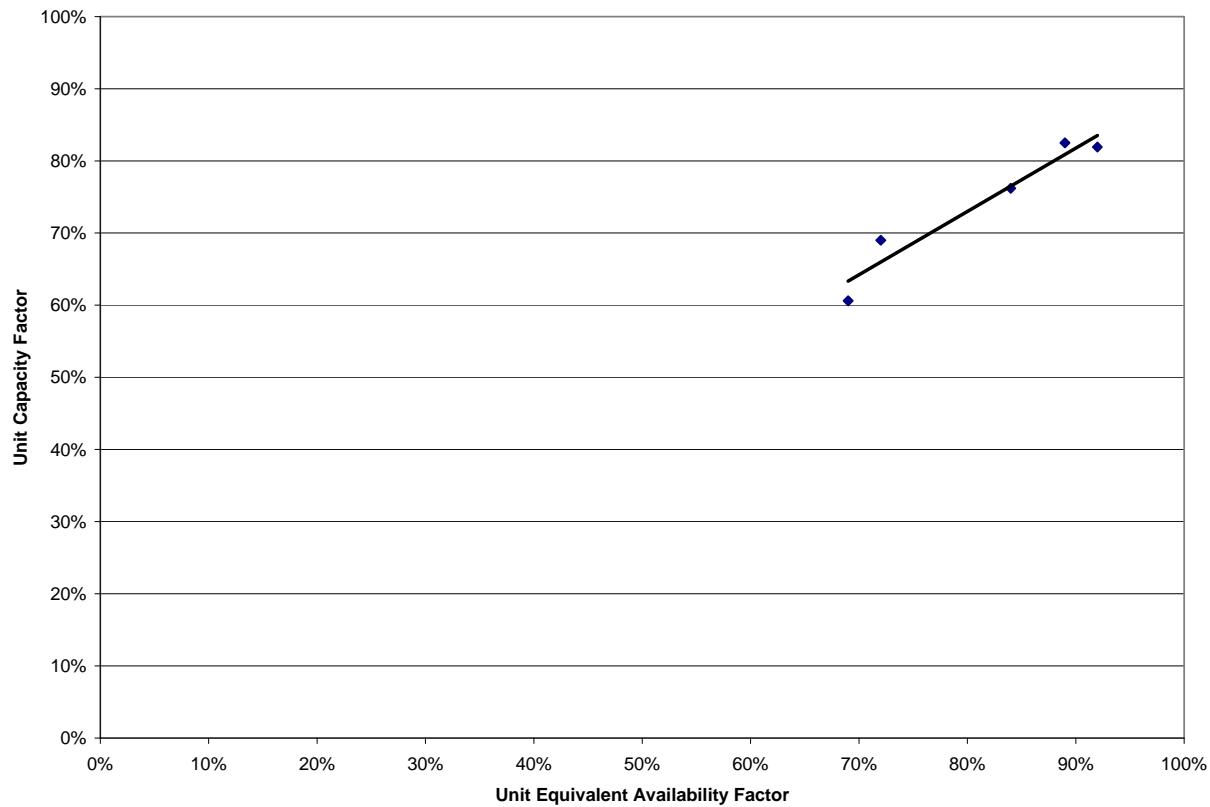
Table 1. Monroe 2 PROMOD data

	EFOR	EAF	CF	UF
2010	9.5%	69%	60.6%	88%
2011	8.3%	92%	81.9%	89%
2012	8.7%	84%	76.2%	91%
2013	8.7%	89%	82.5%	93%
2014	8.9%	72%	69.0%	96%

(13) The 2010 EAF and CF are lower than those predicted for other years because of the planned outage (to conduct the plant modification that is at issue in this case).

(14) The right hand column in the table above, labeled “UF,” lists the utilization factor for Monroe 2, projected for the calendar years indicated. I calculated these UFs by dividing the CF by the EAF. The UF is a measure of the amount that a generating unit is utilized as a portion of the total amount of time that it is available, after accounting for forced and planned outages. I calculated the Monroe 2 UF for the May 2005 to April 2007 baseline period to be 84.4% (based on the CF and EAF specified by the Company in its March 12 and June 3 letters).

(15) Based upon the numbers for CF and UF in the table above, I conclude that Monroe is expected to be a highly utilized baseload unit. In addition, there is a reasonably direct relationship between the CF and EAF for Monroe in the Company's PROMOD run. That is, when EAF increases (the unit is more available) its CF also increases (the unit runs more). This is graphically clear from the x-y plot of the same CF and EAF data, below.



(16) The column in Table 1, above, labeled "EFOR" lists the equivalent forced outage rate input assumptions for Monroe 2 in the Company's PROMOD run.<sup>1</sup> These values, ranging from 8.3% to 9.5% represent a significant decrease (i.e., improvement in availability of the unit) relative to the EFORs calculated for the baseline periods by

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<sup>1</sup> Detroit Edison's June 3, 2010, letter refers to these as "ROR" for "random outage rates" but here I will use the more commonly used terminology "EFOR" or "equivalent forced outage rate."

Ranajit (Ron) Sahu, using the data DTE reported to EPA. Mr. Koppe's calculations for the SO<sub>2</sub> and NO<sub>x</sub> baseline periods put the outage rate at 14.5% and 16.6% respectively. The PROMOD EFOR inputs are slightly more than one half of these values.

- (17) For the EAF, Mr. Koppe's calculations based on GADS data put the Monroe 2 EAF for the baselines periods at 81.3% and 79.3% (for SO<sub>2</sub> and NO<sub>x</sub>, respectively). The PROMOD EAFs are well above this for the years 2011, 2012, and 2013.
- (18) In the PROMOD model, as in the actual operation of an electric power system, plant availability will have a direct impact upon plant generation. Plant availability is input to the model in the form of planned outages and expected forced outage rate (FOR). Together the planned outages and the equivalent forced outage rate determine the "equivalent availability factor" or "EAF." As a general matter, a decreased forced outage rate means an increased EAF, and the increased EAF will result in a higher capacity factor for the unit. Moreover, the relationships among these variables tend to be linear. That is, with other variables constant in the model, the additional availability tends to be used according to a utilization factor for the unit. The additional generation typically results in increased fuel use and air emissions.
- (19) There are other factors besides the EAF that can indirectly influence the capacity factor of a generating unit. These include the relative operating costs of generators (e.g., the economic dispatch order or loading order) and the system demand. In the case of Detroit Edison's projected operation of the Monroe units, from the limited information provided there is no indication of a large change in operating costs. There is a large change in projected system demand assumed in DTE's selected PROMOD run, but that change is

downward between the baseline period and the projection period in DTE's March 12, 2010 letter.

(20) The Company's forecast of system demand is presented in the Power Supply Cost Recovery testimony of Sherrie L. Siefman (MPSC Case No. U-16047). The actual and forecast system output, in millions of kWh, is as follows (from Ms. Siefman's Exhibit No A-8):

2003	55,800
2004	55,656
2005	58,117
2006	57,348
2007	58,128
2008	55,703
2009	51,041
2010	51,387
2011	51,763
2012	52,224
2013	52,331
2014	52,069

(21) In summary, the Company's PROMOD runs, which are the basis for the 2010 PSCR filing and for the March 12 and June 3 letters, show Monroe 2 generation increasing. This increase cannot reasonably be attributed to increases in demand, which is dropping precipitously according to the Company's forecast. The decrease to the unit's EFOR and improvement to unit availability is clearly a cause of the expected increase in generation.

(22) Appendix A contains my resume. Appendix B provides a list of considered documents.

I declare under penalty of perjury that the foregoing is true and correct.



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Bruce E. Biewald

Executed on July 21, 2010 in Cambridge, Massachusetts.

## APPENDIX A

### BIEWALD RESUME

Bruce Edward Biewald  
President  
Synapse Energy Economics, Inc.  
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#### PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA. President, 1996 to present.  
Consulting on issues of energy economics, environmental impacts, and utility regulatory policy, including electric power system planning, air emissions, climate change policy, market power, mergers and acquisitions, generation asset valuation and divestiture, nuclear and fossil power plant costs and performance, renewable resources, power supply contracts and performance standards, green marketing of electricity, nuclear plant decommissioning and radioactive waste issues, environmental externalities valuation, energy conservation and demand-side management, electric power system reliability, avoided costs, dispatch modeling, economic analysis of power plants and resource plans, portfolio management, risk analysis and risk management.

Tellus Institute, Boston, MA. Senior Scientist and Manager of the Electricity Program, 1989 to 1996, Research Associate and later Associate Scientist, 1980-1988.

Responsible for research and consulting on all aspects of electric system planning, regulation, and restructuring.

#### EDUCATION

Massachusetts Institute of Technology,  
BS 1981, Architecture, Building Technology, Energy Use in Buildings.  
Harvard University Extension School,  
1989/90, Graduate courses in micro and macroeconomics.

#### SUMMARY OF TESTIMONY, PUBLICATIONS, AND PRESENTATIONS

Expert testimony on energy, economic, and environmental issues in more than one hundred utility regulatory proceedings in twenty six states and two Canadian provinces, in cases in State and Federal Courts, and in proceedings of the Federal Energy Regulatory Committee and the Nuclear Regulatory Commission's Atomic Safety and Licensing Board.

Co-author of more than one hundred reports, including studies for the Electric Power Research Institute, the U.S. Department of Energy, the U.S. Environmental Protection Agency, the Office of Technology Assessment, the New England Governors' Conference, the National Association

of Regulatory Utility Commissioners, and the United Nations Framework Convention on Climate Change.

Papers published in the Electricity Journal, the Energy Journal, Energy Policy, Public Utilities Fortnightly, and numerous conference proceedings.

Invited to speak by American Society of Heating, Refrigerating, and Air-Conditioning Engineers, American Society of Mechanical Engineers, International Atomic Energy Agency, National Association of Regulatory Utility Commissioners, National Association of State Utility Consumer Advocates, National Consumer Law Center, the Latin American Energy Association (OLADE), the Swedish Environmental Protection Agency (SNV), the U.S. Environmental Protection Agency, the European Federation of Clean Air and Environmental Protection Associations, and others.

## TESTIMONY

United States District Court for the North District of Alabama (Civil Action No 2:01-CV-00152-VEH) United States v. Alabama Power Company – December 2009  
Expert report on use of computer models for electric system planning and projections of generating unit operations. Also rebuttal report in May 2010.

United States District Court for the Eastern District of Kentucky, Lexington Division (Case 5:05-cv-0075-KSF) United States v. Kentucky Utilities Company – October 2008  
Expert report on use of computer models for electric system planning, capital investment planning and economic analysis, and projections of generating unit operations.

Nova Scotia Utility and Review Board – August 2008  
Review of rate case issues; power plant depreciation and load forecasting.

Nova Scotia Utility and Review Board – March 2008  
Review of Nova Scotia Power Inc.'s demand-side management plan.

Indiana Utility Regulatory Commission (Cause Nos. 43114 and 43114S1) – May 2007  
Review of IGCC Plant Proposal by Duke Energy Indiana and Vectren Testimony of Synapse Witnesses. Also cross answering testimony later in the month.

California Public Utilities Commission (Docket No. R.06-02-013) – March 2007  
Joint testimony with William Steinhurst and Rick Hornby on electric utility long-term planning and procurement, including procurement strategy, treatment of carbon dioxide emissions, credit and collateral policies, customer risk tolerance, and resource needs.

New Jersey Board of Public Utilities (Docket No. EM05020106) – November and December 2005 and March 2006  
Joint testimony with Bob Fagan and David Schlissel on the market power implications of the proposed merger between Exelon Corp. and Public Service Enterprise Group.  
Indiana Utility Regulatory Commission (Cause Nos. 42861) – October 2005

Vectren (SIGECO) environmental compliance planning, including climate change policy and carbon price forecasting, energy efficiency and renewables as compliance options, and cost recovery issues.

United States District Court for the Eastern District of Kentucky, Lexington Division (Civil Action No.04-34-KSF, United States v. East Kentucky Power Cooperative – September 2005 Expert report on state regulation of electric utilities, use of computer models for system planning, capital investment planning and economic analysis, and projections of generating unit operations.

United States District Court for the Southern District of Indiana (Civil Action No. IP99-1693 C-M/S, United States v. Cinergy – May 2005

Expert report on state regulation of electric utilities, forecasting sales and resource requirements, use of computer models for system planning, capital investment planning and economic analysis, projections of generating unit operations, and the relationship between generator availability and output. Also, rebuttal report in September.

Federal Energy Regulatory Commission (Docket No. EC05-43-000) – April 2005

Market power analysis of the proposed merger of Exelon Corporation and Public Service Enterprise Group Incorporated. (Joint affidavit with David Schlissel.)

Nuclear Regulatory Commission Atomic Safety and Licensing Board (Docket No. 52-007-ESP and ASLBP No. 04-821-01-ESP) – April 2005

Affidavit on the environmental impacts and economic costs of a proposed new nuclear power project and alternatives.

Indiana Utility Regulatory Commission (Cause Nos. 42622 and 42718) – March 2005

Public Service Company of Indiana environmental compliance planning, including cost estimates for emission control technologies, climate change policy and carbon price forecasting, energy efficiency and renewables as compliance options, power plant retirement economics, and cost recovery issues.

National Research Council, Division on Engineering and Physical Sciences, Board on Energy and Environmental Systems (Project No. BEES-J-03-03-A) – March 2005

Alternatives for replacing the generation of the Indian Point Energy Center nuclear facility.

Georgia Public Service Commission (Docket No. 18300-U) – October 2004

Georgia Power Company's cost of service study, treatment of electrical distribution equipment, and proposed rates for the Metropolitan Atlanta Rapid Transit Authority.

Texas Public Utility Commission (Docket No. 29526) – June 2004

Issues in CenterPoint Energy Houston Electric LLC's true up filing, including environmental cleanup costs, excess mitigation credits, and construction work in progress. Also rebuttal testimony on June 14.

Texas Public Utility Commission (Docket No. 28818) – April 2004

The Independent Transmission Operator proposal of Energy Gulf States Utilities, Inc. (prefiled testimony adopted by Paul Peterson).

Indiana Utility Regulatory Commission (Cause No. 42359) – August 2003

Public Service Company of Indiana rate making issues including the impact of trackers on risks to shareholders and customers, costs of environmental compliance, treatment of merchant plant investment and risk, and joint dispatch issues.

Nevada Public Utilities Commission (Docket No. 03-1014) – April 2003

Review of Sierra Pacific Power Company's risk management and procurement of electric power in the wholesale markets.

Nevada Public Utilities Commission (Docket No. 02-11021) – March 2003

Review of Nevada Power Company's risk management and procurement of electric power in the wholesale markets.

United States District Court for the Southern District of Illinois (Civil Action No. 99-833-MJR, United States v. Illinois Power Company and Dynegy Midwest Generation, Inc.) – August 2003  
Testimony at trial on analysis and opinions in rebuttal report dated October 2002 on use of computer models for system planning, projections of generating unit operations, and the relationship between generator availability and output.

State of Vermont, Windham Superior Court (Appeal of USGen New England, Inc. from 2001

Property Valuation by the Town of Rockingham) – September 2002

Electricity market prices and economic valuation of hydroelectric generating plant.

United States District Court for the Middle District of North Carolina (Civil Action No. 1:00 CV 1262, United States v. Duke Energy Corporation) – August 2002

Expert report on use of computer models for system planning, projections of generating unit operations, and the relationship between generator availability and output. (Joint report with Phil Hayet.)

Indiana Utility Regulatory Commission (Cause No. 41746) – July 2002

Reply testimony on a rate case settlement agreement, dealing with issues including NiSource's financial condition, service quality, environmental commitment, and electric rate impacts.

Connecticut Department of Public Utility Control (Docket No. 00-12-13RE01) – July 2002

The proposed sale of Seabrook Nuclear Station to FPL Energy Seabrook, LLC. Market power issues and market modeling.

United States District Court for the Southern District of Indiana (Civil Action No. IP99-1692-C-M/S, United States v. Southern Indiana Gas and Electric Company) – June 2002

Declaration on confidential business information and competitive harm.

Nevada Public Utilities Commission (Docket No. 02-2002) – April 2002

Review of Sierra Pacific Power Company's risk management and procurement of electric power in the wholesale markets.

Vermont Public Service Board (Docket No. 6596) – March 2002

Used and useful policy issues, electricity market prices, and above market costs of the purchase from Hydro Quebec.

Nevada Public Utilities Commission (Docket No. 01-11029) – February 2002

Review of Nevada Power Company's risk management and procurement of electric power in the wholesale markets.

Vermont Public Service Board (Docket No. 6545) – January 2002

Economic analysis of the proposed sale of Vermont Yankee nuclear plant and an associated Purchased Power Agreement.

New Jersey Board of Public Utilities (Docket No. EM01050308) – September 2001

Analysis of the proposed merger between Conectiv and PEPCo. Also, surrebuttal testimony in November. (Joint testimony with David Schlissel.)

Indiana Utility Regulatory Commission (Cause No. 41954) – June 2001

System planning and joint operation in a partially deregulated context.

State of Vermont, Windham Superior Court (Dockets S 362-9-99 and S372-9-99) – May 2001

Deposition on electricity market prices and economic valuation of hydroelectric generating plant.

Federal Energy Regulatory Commission (Docket No. ER01-200-001) – April 2001

Termination of the Cinergy Operating Agreement, treatment of merger savings, and affiliate relationships. Also cross-answering testimony in April.

New Jersey Board of Public Utilities (Docket No. EM00110870) – April 2001

Analysis of the proposed merger between FirstEnergy and GPU. Also, supplemental testimony in April. (Joint testimony with David Schlissel.)

Vermont Public Service Board (Dockets Nos. 6120 and 6460 – March 2001

Used and useful policy issues, electricity market prices, and above market costs of the purchase from Hydro Quebec. Also, surrebuttal testimony in April.

United States District Court for the Northern District of New York (Civil Action No. 00-CV-1738) – January 2001

Affidavit on the issuance and trading of SO2 emission allowances under the Title IV of the Clean Air Act, in Clean Air Markets Group v. George E. Pataki et al.

Department of Energy (Docket No. EE-RM-500) – December 2000

Oral testimony on proposed rules for central air conditioner and heat pump energy conservation standards.

Illinois Commerce Commission (Docket No. 00-0361) – July 2000

Review of ComEd's funding for nuclear power plant decommissioning.

California Public Utilities Commission (Rulemaking 99-10-025) – July 2000  
Distributed generation and related rate design issues. Also, rebuttal testimony in August.

Massachusetts Department of Environmental Protection – July 2000  
Comments on reliability implications of proposed emission standards for power plants.

Arkansas Public Service Commission (Docket No. 00-048-R) – June 2000  
Requirements for electricity market power analyses.

United States District Court for the Middle District of North Carolina (1:99CV00033) – March 2000  
Expert report on replacement power costs in Carolina Power & Light Company vs. Yuasa Exide, Inc.

Illinois Commerce Commission (Docket No. 99-0115) – September 1999  
Review of ComEd's nuclear power plant decommissioning cost estimates.

West Virginia Public Service Commission (Case No. 98-0452-E-GI) – August 1999  
AEP and Allegheny Power restructuring, market power, divestiture of generation, electric system market price modeling, statistical analysis of comparable sales, and responsibility for stranded costs and gains.

Mississippi Public Service Commission (Docket No. 96-UA-389) – August 1999  
Review of Entergy Mississippi, Inc. and Mississippi Power Company stranded cost filings, divestiture of generation, statistical analysis of comparable sales, responsibility for stranded costs and gains.

Connecticut Department of Public Utility Control (Docket No. 99-03-36) – July 1999  
Connecticut Light and Power Company standard offer service, market prices for electricity and the influence of market power, simulation analysis of the New England electricity market.

Connecticut Department of Public Utility Control (Docket No. 99-03-35) – July 1999  
United Illuminating Company standard offer service, market prices for electricity and the influence of market power, simulation analysis of the New England electricity market.

Utah Public Service Commission (Docket No. 98-2035-04) – June 1999  
Cost savings expectations for the proposed merger of PacifiCorp and Scottish Power.

Washington Utilities and Transportation Commission (Docket No. UE-981627) – June 1999  
Cost savings expectations for the proposed merger of PacifiCorp and Scottish Power and assessment of whether the merger is in the public interest.

Federal Energy Regulatory Commission (Docket Nos. EC98-40-00, et al.) – April 1999  
Horizontal market power and barriers to entry in consideration of the proposed merger of American Electric Power Company and Central and South West Corporation.

Connecticut Department of Public Utility Control (Docket No. 99-03-04) – April 1999  
Market power, market prices, and simulation modeling as related to the application of United Illuminating Company for recovery of stranded costs.

Connecticut Department of Public Utility Control (Docket No. 99-02-05) – April 1999  
Market power, market prices, and simulation modeling as related to the application of Connecticut Light & Power Company for recovery of stranded costs.

Maryland Public Service Commission (Case No. 8797) – January 1999  
Simulation analysis of the ECAR market and projected market prices for electricity for estimation of Potomac Electric Company's stranded generation costs and unbundled rates.

Maryland Public Service Commission (Case No. 8795) – December 1998  
Simulation analysis of the PJM market and projected market prices for electricity for estimation of Delmarva Power and Light Company's stranded generation costs and unbundled rates.

Maryland Public Service Commission (Cases Nos. 8794 and 8804) – December 1998  
Simulation analysis of the PJM market and projected market prices for electricity for estimation of Baltimore Gas and Electric Company's stranded generation costs and unbundled rates.

Vermont Public Service Board (Docket No. 6107) – September 1998  
Excess capacity, used & useful, and the economics of Green Mountain Power's purchase from Hydro Quebec.

Mississippi Public Service Commission (Docket No. 96-UA-389) – September 1998  
Analyses of market concentration and market power, behavior of affiliated companies, need for an independent system operator.

California Public Utilities Commission (Application No. 97-12-020) – July 1998  
Nuclear power plant decommissioning and radioactive waste disposal. Also, rebuttal testimony in August.

Federal Energy Regulatory Commission (Docket No. EC97-46-000) – June 1998  
Affidavit on market power implications of the proposed merger between Allegheny Power System and Duquesne Light Company.

New Jersey Board of Public Utilities (Docket Nos. EX4120585Y, EO97070460, and EO97070463) – March 1998  
Economic and environmental benefits of energy efficiency, including estimation of marginal air emissions from the PJM System. (Joint testimony with Nathanael Greene, Edward Smeloff, and Thomas Bourgeois.)

Vermont Public Service Board (Docket No. 6018) – February 1998  
Excess capacity and the economics of Central Vermont Public Service Company's purchase from Hydro Quebec.

Public Service Commission of Maryland (Case No. 8774) – February 1998  
Market power implications of the APS-DQE merger.

Federal Energy Regulatory Commission (Docket Nos. OA97-237-000 and ER97-1079-000) – January 1998  
Market power in New England electricity markets.

British Columbia Utilities Commission – November 1997  
British Columbia Hydro and Power Authority Wholesale Transmission Services Application.

Pennsylvania Public Utility Commission (Docket R-00973981) – November 1997  
West Penn Power Company Restructuring Plan. Environmental disclosure, consumer education, and allocation of default customers.

Pennsylvania Public Utility Commission (Docket R-00974104) – November 1997  
Duquesne Light Company Restructuring Plan. Environmental disclosure, consumer education, nuclear decommissioning, and allocation of default customers. Also surrebuttal testimony in December 1997.

Mississippi Public Service Commission (Docket No. 97-UA-496) – November 1997  
Petition of Mississippi Power Company for a Certificate of Public Convenience and Necessity Authorizing Construction of a Generating Plant in Jackson County.

Pennsylvania Public Utility Commission (Docket Nos. R-00973953 and P-00971265) – November 1997  
Application of PECO Energy Company for approval of its restructuring plan and petition on Enron Energy Services Power, Inc. for approval of an electric competition and customer choice plan. Allocation of default customers.

Vermont Public Service Board (Docket No. 5983) – October 1997  
Excess capacity and the economics of Green Mountain Power Company's purchase from Hydro Quebec. Also rebuttal testimony in December 1997 and supplemental rebuttal testimony in January 1998.

Pennsylvania Public Utility Commission (Docket No. R-00973953) – September 1997  
Joint petition for partial settlement of PECO Energy Company's proposed restructuring plan and application for a qualified rate order. Environmental disclosure, nuclear decommissioning and spent fuel.

Pennsylvania Public Utility Commission (Docket No. R-00974009) – September 1997  
Pennsylvania Electric Company's Restructuring Plan. Environmental disclosure, customer education, and nuclear issues.

Pennsylvania Public Utility Commission (Docket No. R-00974008) – September 1997

Metropolitan Edison Company's Restructuring Plan. Environmental disclosure, customer education, and nuclear issues.

Indiana Legislature, Regulatory Flexibility Committee -- September 23, 1997.  
Testimony on "Electric Industry Restructuring To Benefit Consumers and the Environment: Stranded Costs, Nuclear Issues, and Air Emissions."

Pennsylvania Public Utility Commission (Docket No. R-00973954) – June 1997  
Pennsylvania Power & Light Company's Restructuring Plan. Environmental disclosure, customer education, PJM market structure, nuclear decommissioning and spent fuel, rate design for stranded cost recovery. Also, surrebuttal testimony in August.

Pennsylvania Public Utility Commission (Docket No. R-00973953) – June 1997  
PECO Energy Company's Restructuring Plan. Environmental disclosure, PJM market structure, nuclear decommissioning and spent fuel.

New York Public Service Commission (Case 96-E-0897) -- April 1997  
Consolidated Edison Company's Plans for Electric Rate Restructuring. Analysis of market power in the New York City load pocket.

Pennsylvania Public Utility Commission (Docket No. R-00973877) -- February 1997  
Application of PECO Energy Company for Issuance of a Qualified Rate Order. Nuclear power plant decommissioning costs, stranded cost recovery, and securitization.

New Hampshire Public Utilities Commission (DR 96-150) -- November 1996  
Electric industry restructuring, including stranded costs, industry structure, market power, and nuclear issues.

Massachusetts Department of Public Utilities (96-100) -- July 1996  
Nuclear plant stranded costs and decommissioning.

Vermont Public Service Board (5854) – July 1996  
Electric industry restructuring, including stranded costs, industry structure, and environmental protection.

Ontario Energy Board (H.R. 23) -- June 1995  
Electricity rate options (joint evidence with John Stutz).

Pennsylvania Public Utility Commission (R-00943271) -- April 1995  
Discount rates and system benefits charge.

Colorado Public Utilities Commission (94A-516A) – January 1995  
Construction of new generating resources.

Public Service Commission of Nevada (94-9002) – November 1994  
Environmental and health impacts of a proposed power plant.

Nuclear Decommissioning Finance Committee of New Hampshire (93-001) – September 1994  
Seabrook decommissioning cost, spent fuel storage, and cost collection methodology (joint testimony with William Dougherty).

Public Service Commission of Wisconsin (6630-CE-197 and 6630-CE-209) – September 1994  
Point Beach externalities, economics, spent fuel storage, and aging (joint testimony with William Dougherty).

British Columbia Utilities Commission – August 1994  
Greenhouse gas emissions and environmental externalities policy

Public Service Commission of Wisconsin (05-EI-14) – February 1994  
Cost of decommissioning Point Beach and Keweenaw nuclear power plants. Also, rebuttal and surrebuttal testimony in February.

Delaware Public Service Commission (91-39) – September 1992  
Nuclear and fossil power plant performance targets.

Massachusetts Department of Public Utilities (91-131) – December 1991  
Internalization of environmental externalities, greenhouse gas valuation and policy.

Massachusetts Department of Public Utilities (91-131) – October 1991  
Environmental externalities valuation, emissions effects and global warming.

Massachusetts Department of Public Utilities ((89-141, 90-73, 90-141, 90-194 and 90-270) – December 1990  
The incorporation of environmental externalities in specific utility RFPs.

Massachusetts Department of Public Utilities (90-55) – June 1990  
Costs and benefits of high-efficiency gas heating equipment.

Massachusetts Department of Public Utilities (86-36-G and 89-239) – March 1990  
Environmental externalities of electric resources.

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“Synapse 2008 CO2 Price Forecasts,” David Schlissel, Lucy Johnston, Bruce Biewald, David White, Ezra Hausman, Chris James, and Jeremy Fisher, July 30, 2008.

“Nuclear Power Plant Construction Costs,” David Schlissel and Bruce Biewald, July 30, 2008.

“Whitepaper on Least Cost Electricity Procurement in Rhode Island,” Rick Hornby, William Steinhurst, and Bruce Biewald, May 31, 2007.

“Climate Change and Power: Carbon Dioxide Emissions Costs and Electricity Resource Planning,” Lucy Johnston, Ezra Hausman, Anna Sommer, Bruce Biewald, Tim Woolf, David Schlissel, Amy Roschelle, and David White, March 2, 2007.

“Capacity for the Future: Kinky Curves and Other Reliability Options,” Paul Peterson, David White, Amy Roschelle, and Bruce Biewald, December 20, 2004.

“Estimating Emission Reductions from Energy Efficiency in the Northeast,” Bruce Biewald and Geoff Keith, ACEEE 2004 Summer Study, Pacific Grove, CA. August 22-27, 2004.

“Long-Term Power Contracts: The Art of the Deal,” Amy Roschelle, William Steinhurst, Paul Peterson, and Bruce Biewald, *Public Utilities Fortnightly*, August 2004.

“Designing Demand Response Programs in New England to Achieve Air Quality Benefits,” Geoffrey Keith, Bruce Biewald, and David White, *The Electricity Journal*, May 2004.

“The 2003 Blackout: Solutions that Won't Cost a Fortune,” David White, Amy Roschelle, Paul Peterson, David Schlissel, Bruce Biewald, and William Steinhurst, *The Electricity Journal*, November 2003.

“Electricity Market Distortions Associated with Inconsistent Air Quality Regulations,” Tim Woolf and Bruce Biewald, *The Electricity Journal*, April 2000.

“Grandfathering and coal plant emissions: the cost of cleaning up the Clean Air Act,” Frank Ackerman, Bruce Biewald, David White, Tim Woolf, William Moomaw, *Energy Policy*, Volume 27, Number 15, December 1999.

“Follow the Money: A Method for Tracking Electricity for Environmental Disclosure,” Bruce Biewald, David White, and Tim Woolf, *The Electricity Journal*, May 1999.

Book Review of “U.S. Utility Mergers and the Restructuring of the New Global Power Industry,” in *Energy*, October 1998.

“Implications of Premature Nuclear Plant Closures: Funding Shortfalls for Nuclear Plant Decommissioning and Spent Fuel Transportation and Storage,” Bruce Biewald and David White, prepared for the United States Association for Energy Economics and International Association

for Energy Economics, 19th Annual North American Conference, Albuquerque, NM, October 1998.

“Efficiency, Renewables and Gas: Restructuring as if Climate Mattered,” Tim Woolf and Bruce Biewald, The Electricity Journal, January/February 1998.

“Green Electricity: Tracking Systems for Environmental Disclosure,” B. Biewald and J.A. Ramey, proceedings of WINDPOWER '97, the American Wind Energy Association's annual conference in Austin, Texas, forthcoming.

“Competition and Clean Air: The Operating Economics of Electricity Generation,” The Electricity Journal, January/February 1997.

“Electric Industry Restructuring and Environmental Sustainability,” proceedings of the United States Association for Energy Economics and International Association for Energy Economics, 17th North American Conference on (De)regulation of Energy, Boston, October 1996.

“Residential Real-Time Metering Technology for Electricity Restructuring,” Daljit Singh and Bruce Biewald, presented at the National Training and Information Center conference, Chicago, September 1996.

“Competition and Environmental Impacts in the U.S. Electric Sector: Must Market Forces be Tamed?,” presented at the International Society of Ecological Economics conference, Boston, August 1996.

“Stranded Risk: Nuclear Power Issues in Electricity Restructuring,” for Energy Advocates meeting in Austin, Texas, May 1996.

“Counting the Costs: Scientific Uncertainty and Valuation Perspective in EXMOD,” Stephen Bernow, Bruce Biewald, William Dougherty, and David White, presented at technical meeting of the International Atomic Energy Agency, Vienna, Austria, December 4-8, 1995.

“Environmentally Targeted Objectives for Reducing Acidification in Europe,” Energy Policy, C.A. Gough, P.D. Bailey, B. Biewald, J.C.I. Kyulenstierna and M.J. Chadwick, December 1994.

“Environmental Externalities: Highways and Byways,” NRRI Quarterly Bulletin, Vol. 15 No. 4, Bruce Biewald, Paul Chernick and Bill Steinhurst, December 1994. Also presented at NARUC's 5th National Conference on Integrated Resource Planning, Kallispell, Montana, May 15-18, 1994.

“From Social Costing to Sustainable Development: Beyond the Economic Paradigm,” Stephen Bernow, Bruce Biewald, and Paul Raskin, in Social Costs of Energy: Present Status and Future Trends, Proceedings of an International Conference held at Racine, Wisconsin, September 8-11, 1992. Edited by Olav Hohmeyer and Richard Ottinger. Published by Springer-Verlag, September 1994.

“Modeling Renewable Electric Resources: A Case Study of Wind,” Stephen Bernow, Bruce Biewald, Daljit Singh, and Jeff Hall, proceedings of the Ninth NARUC Biennial Regulatory Information Conference, Columbus, OH, September 7-9, 1994.

“Alternative Closed Cycle Cooling Systems for Power Plants: A Framework of Evaluation in Integrated Resource Planning,” Daljit Singh and Bruce Biewald, in the proceedings of the Ninth NARUC Biennial Regulatory Information Conference, Columbus, OH. September 7-9, 1994.

“Misconceptions, Mistakes and Misnomers in DSM Cost-Effectiveness Analysis, Or What Do You Really Mean By T.R.C.?” Mark Fulmer and Bruce Biewald, ACEEE 1994 Summer Study, Pacific Grove, CA. August 28 - Sept. 2, 1994.

“Modeling Renewable Electric Resources: A Case Study of Wind Power,” Stephen Bernow, Bruce Biewald, and Daljit Singh, presented at WINDPOWER 1994, Sponsored by American Wind Energy Association, Minneapolis, Minnesota, May 9-13, 1994.

"National Climate Change Policy and Clean Air Act Compliance: A Case Study of Combined CO2/SO2 Reduction," Stephen Bernow, Bruce Biewald, Mark Fulmer, Tim Woolf, Kristen Wulfsberg, and Barry Solomon, in the proceedings of NARUC's 5th National Conference on Integrated Resource Planning, Kallispell, Montana, May 15-18, 1994.

"Modeling Renewable Electric Resources: A Case Study of Wind Reliability," Stephen Bernow, Bruce Biewald, and Daljit Singh, presented at the NARUC-DOE National Regulatory Conference on Renewable Energy, Savannah, Georgia, October 3-6, 1993.

"Environmental Sustainability as a Goal in Resource Planning and Policy," Stephen Bernow and Bruce Biewald, Office of Technology Assessment workshop, Washington, DC. April 1993.

"Climate Change and the U.S. Electric Sector," Bruce Biewald and Stephen Bernow, presented at NARUC's 4th National Conference on Integrated Resource Planning, Burlington, Vermont, September 1992.

"Coordinating Clean Air Act Compliance with Integrated Resource Planning: The Role of Externalities," Stephen Bernow, Bruce Biewald, and Kristin Wulfsberg, the Eighth NARUC Biennial Regulatory Information Conference, Ohio State University, Columbus, Ohio. September 9-11, 1992.

"Direct Environmental Impacts of Demand-Side Management," Stephen Bernow, Frank Ackerman, Bruce Biewald, Mark Fulmer, Karen Shapiro, and Kristin Wulfsberg, American Council for an Energy Efficient Economy (ACEEE) 1992 Summer Study, September 1992.

"Modeling Fuel Cycle and Site-Dependent Environmental Impacts in Electric Resource Planning," Stephen Bernow and Bruce Biewald, invited paper at OECD-IEA Expert Workshop on Life-Cycle Analysis of Energy Systems, Paris, France, May 18 and 19, 1992. Proceedings published OECD/IEA Paris, 1993.

"Computer Model Use in Energy Conservation Planning," presented at the Latin American Energy Organization (OLADE) Seminar on Power Systems Computer Modeling in Quito, Ecuador, September 23-25, 1991.

"Environmental Externalities Measurement: Quantification, Valuation and Monetization," Bernow, Biewald and Marron, in External Environmental Costs of Electric Power, proceedings of a German-American workshop, Ladenburg, FRG, October 23-25, 1991. Edited by Olav Hohmeyer and Richard Ottinger, published by Springer-Verlag (Berlin, Heidelberg, New York). "Some Microcomputer Tools for Least Cost Integrated Energy Planning: ECO, LEAP and EDB," Bruce Biewald and Harvey Salgo, presented at workshop on Energy Pricing and Planning, Bratislava, Czechoslovakia, May 21-22, 1991.

"Confronting Uncertainty: Contingency Planning for Decommissioning," Bruce Biewald and Stephen Bernow, Chapter 18 of "Nuclear Decommissioning Economics," a special issue of The Energy Journal of the International Association for Energy Economics, Vol.12, March 1991.

"Avoided Emissions and Environmental Dispatch," Stephen Bernow and Bruce Biewald, presented at the Conference on "Demand-Side Management and the Global Environment," Arlington, Virginia, April 22-23, 1991.

"Environmental Benefits of DSM in New York: Long Island Case Study," Bruce Biewald and Stephen Bernow, presented at the Conference on "Demand-Side Management and the Global Environment," Arlington, Virginia, April 22-23, 1991.

"Full Cost Dispatch: Incorporating Environmental Externalities in Electric System Operation," Stephen Bernow, Bruce Biewald and Donald Marron, the Electricity Journal, March 1991.

"EDB: A Flexible Database System for Energy-Environmental Analysis," Bruce Biewald, Michael Lazarus, and David Von Hippel, presented at International Atomic Energy Agency

(IAEA) Technical Committee Meeting on "Development of a Database for Comparative Health and Environmental Impacts of Various Energy Systems," in Vienna, Austria, October 15-19, 1990.

"Full Cost Economic Dispatch: Recognizing Environmental Externalities in Electric Utility System Operation," Stephen Bernow, Bruce Biewald, and Donald Marron, presented at NARUC Conference on Externalities, Jackson Hole, Wyoming, October 1990.

"An Assessment of Demand-Side Management Models and Their Use and Applicability in Canadian Utilities," Martin Adelaar and Bruce Biewald, in the proceedings of the Canadian Electrical Association Demand-Side Management Conference, Halifax, Nova Scotia, September 1990.

"Avoided Cost Contracts Can Undermine Least Cost Planning," Stephen Bernow, Bruce Biewald, and Donald Marron, Energy Policy, September 1990.

"Environmental Externalities Measurement: Quantification, Valuation, and Monetization," Stephen Bernow, Bruce Biewald, and Donald Marron, in the proceedings of the Seventh NARUC Biennial Regulatory Information Conference, September 1990.

"Do We Really Need Nuclear Generating Companies?," Public Utilities Fortnightly, June 7, 1990.

"Nuclear Power Economics: Construction, Operation and Disposal," Bruce Biewald and Donald Marron, March 1989.

"Electric Utility System Reliability Analysis: Determining the Need for Generating Capacity," Stephen Bernow and Bruce Biewald, in the proceedings of the Sixth NARUC Biennial Regulatory Information Conference, September 1988.

"Nuclear Power Plant Decommissioning: Cost Estimation for Power Planning and Ratemaking," Stephen Bernow and Bruce Biewald, Public Utilities Fortnightly, October 29, 1987.

"Cost and Performance of Boiling Water Reactors," Stephen Bernow, Bruce Biewald and Tim Woolf, Public Utilities Fortnightly, August 1987.

## PRESENTATIONS

(Note: Presentations that were accompanied by a written paper are listed in the section for "papers," above.)

"The U.S. Power System: Economic and Regulatory Challenges to Reducing Greenhouse Gas Emissions from the World's Largest Machine," presentation at Design Continuum, December 3, 2008.

"Economics of Electric Sector CO2 Emissions Reduction: Making Climate Change Policy that People Can Live With," presentation at the NASUCA 2008 Annual Meeting, November 18, 2008.

"Selected Topics from Avoided Energy Supply Costs in New England 2007 Final Report," presentation at a MA DPU Technical Session, July 29, 2008.

"Prudent Planning and New Coal-Fired Generation," presentation at the CERES 2008 Conference, April 29, 2008.

"Climate Change Policies in the Northeast - Carbon Emission Caps and Energy Cost," presentation at the ASHRAE Winter Meeting, prepared for the American Society of Heating, Refrigerating and A/C Engineers, January 19, 2008.

“Efficiency and Renewable Energy for Carbon Constrained Electric Systems 2007,” presentation at the NASUCA Annual Meeting, Anaheim, California, prepared for National Association of State Utility Consumer Advocates, November 12, 2007.

“Air Emissions Issues Associated DER in the Mid-Atlantic Region,” presentation at the Mid-Atlantic State Energy and Environment Workshop on Distributed Energy Resources, September 27, 2007.

“Exploration of Costs for Load Side and Supply Side Carbon Caps for California,” presentation at the Joint En Banc Hearing of PUC and CEC on Point of Regulation in the Electricity Sector (R.06-04-009), prepared for Regulatory Assistance Project, and California Public Utilities Commission, August 21, 2007.

“Portfolio Management: Tools and Practices for Regulators,” presentation at the NARUC 2006 Summer Meeting in San Francisco, California, and for the Annual Convention in Miami, Florida, prepared for the National Association of Regulatory Utility Commissioners, July 2006 and November 2006.

“Electricity Price Increases: Causes, Effects, and Solutions,” presentation at the Restructuring Roundtable, May 19, 2006.

“Forecasting and Using Carbon Prices in a World of Uncertainty,” presentation to Electric Utilities Environmental Conference in Tucson, Arizona on January 22, 2006.

“Energy Efficiency in the Northeast,” presentation at ACEEE National Conference on Energy Efficiency as a Resource, Berkeley, CA, September 27, 2005.

“The Shape of Things to Come: Incorporating Unproven Reserves of Efficiency Savings into Energy Models,” presentation to the East Coast Energy Group, Washington, DC, November 10, 2004.

“Displaced Emissions from Renewables and Efficiency in the Northeast United States,” presentation at a workshop convened by the Commission for Environmental Cooperation, the US Environmental Protection Agency, and the World Resources Institute, Washington DC, November 4, 2004.

“Electric Transmission Technical and Policy Issues,” presentation at National Association of State Utility Consumer Advocates conference in Austin, Texas, June 14, 2004.

“Incorporating Renewable Generation into a Risk Management Strategy,” presentation at the New England Conference of Public Utility Commissioners Symposium, Brewster, Massachusetts, May 25, 2004.

“Electricity Portfolio Management,” presentation at Illinois State University Institute for Regulatory Policy Studies Conference on “Beyond 2006,” Springfield, Illinois, May 20, 2004.

“Electricity Risk Management: Diversified Resource Portfolios,” presentation at Electric Power Supply Association Meeting, Washington, D.C., May 6, 2004.

“Quantifying Emission Reductions from Local Government Actions,” presentation to Metropolitan Washington Council of Governments Energy and Air Quality Conference, Washington DC, April 5, 2004.

“Electricity Portfolio Management,” presentation to National Association of Regulatory Utility Commissioners’ conference in Washington, D.C., March 9, 2004.

“Portfolio Management for Electricity,” presentation at the Regulatory Assistance Project’s workshop on portfolio management, Chicago, September 18, 2003.

“Issues in Estimating Electric System Displaced Emissions,” presentation at the Commission for Environmental Cooperation Technical Meeting on Approaches to Estimating Environmental Benefits of Renewable Energy and Energy Efficiency, Washington, DC, July 27, 2003.

“Best Practices in Market Monitoring and Mitigation,” presented at the National Association of State Utility Consumer Advocates Mid-Year Meeting in Austin, Texas, June 16, 2002.

“Regulation of Waste Management at Large Electric Utilities: Modeling Industry Impacts,” US Environmental Protection Agency, August 7, 2001.

“Quality of Service in Performance-Based Regulation: US Experiences,” presented at the Seminar on Regulation of Electricity Supply Quality, Milan, Italy, June 8, 2001.

“Demand Response in Electricity Markets,” presented at the National Association of State Utility Consumer Advocates Mid-Year Meeting in Santa Fe, New Mexico, June 18, 2001.

Presentation on “Repowering the Midwest: The Clean Energy Development Plan for the Heartland,” at the National Wind Coordinating Committee Upper Midwest Transmission Workshop, Minneapolis, Minnesota, May 1, 2001.

“Observations on New England’s Electricity Markets,” National Regulatory Research Institute Market Power Conference, Columbus, Ohio, April 10, 2001.

Presentation on “Derailing Coal: The Economics of Coal-Fired Electricity Generation in the U.S.,” Tax Shift Strategy Meeting, Washington, D.C., December 2, 2000.

Presentation on “Repowering the Midwest: A Clean Energy Development Plan for the Heartland,” presentation with Howard Learner at the National Association of Regulatory Utility Commissioners Annual Meeting, San Diego, California, November 14, 2000.

Presentation on “Electricity in New England: Market Imperfections of Failure?” at National Association of State Utility Consumer Advocates Annual Meeting, San Diego, California, November 13, 2000.

Presentation on “How Green is Green? Verifying Energy Advertising Claims,” at the New England Conference of Public Utility Commissioners Symposium, Bretton Woods, New Hampshire, May 25, 1999.

Presentation on “Consumer Perspectives on Market Power – Case Studies from New England, New York, PJM, and Mississippi,” IBC Conference on Market Power, Washington DC, May 24, 1999.

Presentation on “Grandfathering and Environmental Comparability,” at the National Association of Regulatory Utility Commissioners 1998 Summer Committee Meetings, Seattle, July 26, 1998.

Presentation on “Tracking Electricity in the New England Market,” at the National Association of Regulatory Utility Commissioners 1998 Summer Committee Meetings, Seattle, July 26, 1998.

Presentation on “Tracking Electricity in the New England Electricity Market,” at the National Council on Competition and the Electricity Industry National Executive Dialogue on Customers’ Right to Know, Chicago, May 13, 1998.

Presentation on “Comparable Environmental Regulations in a Restructured Electricity Industry: The Grandfathering Effect,” National Association of Regulatory Utility Commissioners meeting in Washington, D.C., March 1, 1998.

Presentation on “Market Power in Electricity Generation,” National Consumer Law Center Conference, Washington, D.C., February 9, 1998.

Presentation on “Electricity Market Power in New England,” Massachusetts Electric Industry Restructuring Roundtable, Boston, December 15, 1997.

Presentation on wind power development and air quality, National Wind Coordinating Committee New England Wind Issues Forum, Boston, November 7, 1997.

Invited speaker on market power, National Association of State Utility Consumer Advocates meeting in Boston, November 12, 1997.

Presentation on "Distortions to Future and Current Competitive Electric Energy Markets Due to Grandfathering Environmental Regulations of Electric Power Plants," National Association of Regulatory Utility Commissioners meeting in Boston, November 9, 1997.

Presentation on "Electric Industry Restructuring as if the Environment Mattered," Boston Area Solar Energy Association, October 9, 1997.

Invited speaker on "Modeling Market Power in Electricity Generation," National Association of Regulatory Utility Commissioners meeting in San Francisco, July 22, 1997.

Presentation on "Performance-Based Regulation in a Restructured Electric Industry," National Association of Regulatory Utility Commissioners meeting in San Francisco, July 20, 1997.

Presentation on "State Initiatives and Regional Issues," New England Governors' Conference Workshop on Restructuring and Environmentally Sustainable Technologies, Warwick, Rhode Island, March 25, 1997.

Invited speaker on stranded costs, National Association of State Utility Consumer Advocates meeting in San Francisco, November 1996.

Presentation on "Nuclear Power Plant Decommissioning Costs and Electricity Restructuring," Nuclear Decommissioning Trusts conference, New York City, November 18, 1996.

Invited speaker on stranded costs, Indiana Utilities Regulatory Commission Forum, Indianapolis, November 1, 1996.

Presentation on "Electric Industry Restructuring and the Environment," at the Indiana Energy Conference, Indianapolis, Indiana, October 10, 1996.

Presentation on "Small Customers in a Restructured Electricity Industry: Transaction Costs, Advanced Metering Technologies and Aggregation Options" to the Consumers' Energy Conference, South Portland, Maine, July 1996.

Presentation on "Electric Generation Market Power in New England" to New England Conference of Public Utility Commissioners, Manchester Village, Vermont, May 1996.

Presentation on "Advanced Metering for Residential Customers on Electricity Restructuring" to National Consumer Law Center's 10th Annual Conference in Washington, DC, February 1996.

Presentations on "Market Power," "Environmental Aspects of Restructuring" and "Market Access for Small Customers" to Vermont Public Service Board workshops on electricity restructuring, January and February 1996.

Presentation on "Environmental Impacts of Energy: Sustainability and Social Costing" to British Columbia Utilities Commission Workshop, Vancouver, BC, March 1995.

Presentation on "Competition and Economic Efficiency" to the National Council on Competition and the Electric Industry, December 1995.

Presentation on "Compliance Planning Under Regulatory Uncertainty," to EPA "Opportunities Conference: Energy Efficiency and Renewable Energy," Washington, DC, June 1993.

Presentation on "Energy and Sustainability" to Hydro-Quebec Conference, Hampshire College, Amherst, Massachusetts, April 1993.

Invited Speaker on environmental externalities, ASME "ECO World" conference in Washington, DC, June 1992.

Invited Speaker, Association of Energy Engineers, Boston, Massachusetts, February 1992.

Presentation of Acid Rain Abatement Optimization Model to the Swedish Environmental Protection Agency, Solna, Sweden, November 1991.

Presentation on Integrated Resource Planning to Boston Gas Company, July 1990.

Training on Methods for Calculating Electric System Avoided Costs, provided to energy planners and policy makers from five Southeast Asian countries sponsored by U.S. Agency for

International Development and administered by the Institute of International Education, May 1990.

Invited Speaker, National Association of State Utility Consumer Advocates (NASUCA) Mid-Year Meeting, Annapolis, Maryland, and June 1988.

Invited Speaker, Conference on New Developments in Nuclear Decommissioning Costs and Funding Methods, sponsored by the Northeast Center for Professional Education, Washington, DC, April 1988.

Resume dated June 2010.

**APPENDIX B**

**CONSIDERED DOCUMENTS**

- (1) Letter to Mr. William Presson (Michigan Department of Environmental Quality) from Kelly L. Guertin (DTE Energy Company), March 12, 2010.
- (2) Letter to Mr. Mark Palermo (US EPA Region 5) from Michael J. Solo, Jr. (DTE Energy Company), June 3, 2010.
- (3) Qualification and Direct Testimony of Sherrie L. Siefman (The Detroit Edison Company), MPSC Case No. U-16047, September 2009.
- (4) Declaration of Ranajit (Ron) Sahu, in this matter.